

**Patent claims**

1. Characterized in that the heating element serves as temperature sensor, without additionally requiring a temperature sensor, a measuring resistor or the like. The heating element directly serves for measuring and regulating its own temperature.
2. Characterized in that the dimension of the heating element is user defined.
3. Characterized in that the temperature of the heating element can be acquired without using a temperature sensor.
4. Characterized in that no separate measuring resistor in the heating circuit of a heating element is required for measuring the heating current.
5. Characterized in that the resistance of the heating element is compared with a resistance target value.
6. Characterized in that the resistance of the heating element and thus the temperature of the heating element can be maintained at a constant value by means of regulation.
7. Characterized in that a pulse generator determines fixed times for a measuring phase and a heating phase. During the measuring phase no heating takes place. During the measuring phase only a low measuring current flows through the heating element. During the measuring phase the ohm-resistance value of the heating element is measured. The resistance at the heating element is acquired periodically.
8. Characterized in that the regulating process is a linear one.
9. Characterized in that the regulation can also be performed by means of a computer.